

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (previously presented): A functional molecular element comprising:

a molecule with permittivity anisotropy and/or a dipole moment;

a metal ion; and

a conjugated molecule,

wherein the molecule with permittivity anisotropy and/or the dipole moment and the conjugated molecule form a complex with the metal ion, and wherein conductivity of the conjugated molecule is changed by changing an orientation of the molecule with the permittivity anisotropy and/or the dipole moment by an action of an electric field.

Claim 2 (original): A functional molecular element according to Claim 1, wherein the molecule with the permittivity anisotropy and/or the dipole moment is a Lewis base molecule.

Claim 3 (original): A functional molecular element according to Claim 1, wherein the metal ion is a Lewis acid.

Claims 4-5 (cancelled)

Claim 6 (original): A functional molecular element according to Claim 1, wherein the conjugated molecule is polypyrrole.

Claim 7 (original): A functional molecular element according to Claim 1, wherein the molecule with the permittivity anisotropy and/or the dipole moment is 4-pentyl-4'-cyanobiphenyl.

Claim 8 (original): A functional molecular element according to Claim 1, wherein the metal ion is a silver ion.

Claims 9-10 (cancelled)

Claim 11 (previously presented): A functional molecular device, comprising:

a molecule with permittivity anisotropy and/or a dipole moment;

a metal ion;

a conjugated molecule, the molecule with permittivity anisotropy and/or the dipole moment and the conjugated molecule forming a complex with the metal ion;

an electric field applying means that applies an electric field to the molecule with permittivity anisotropy and/or the dipole moment; and

an input/output means for the conjugated molecule,

wherein a conductive path is formed by the conjugated molecule and conductivity of the conductive path is controlled by changing an electric field that acts upon the molecule with the permittivity anisotropy and/or the dipole moment.

Claim 12 (original): A functional molecular device according to Claim 11, wherein the input/output means inputs and outputs electrons.

Claim 13 (original): A functional molecular device according to Claim 11, wherein the molecule with permittivity anisotropy and/or the dipole moment is oriented on an electrode for applying the electric field, the metal ion and the conjugated molecule are disposed at least between opposing electrodes, and an output corresponding to the electric field is taken from at least one of the opposing electrodes.

Claim 14 (cancelled)

Claim 15 (original): A functional molecular device according to Claim 11, wherein before the electric field is applied, the conductivity of the conductive path is changed by applying a high frequency electric field to the complex.

Claim 16 (original): A functional molecular device according to Claim 11, wherein by changing the electric field that acts upon the molecule with permittivity anisotropy and/or the dipole moment, the positional relationship of the molecule with respect to an orientation of the electric field, the angle between the molecule and the conjugated molecule, an acting position of the metal ion, or a three-dimensional structure of the complex changes.

Claim 17 (original): A functional molecular device according to Claim 11, wherein a layer of the conjugated molecule and a layer of the molecule with permittivity anisotropy and/or the dipole moment form a multilayer structure.

Claim 18 (original): A functional molecular device according to Claim 17, wherein
an insulating layer is provided on a first electrode,
second and third electrodes are formed on the insulating layer so as to not contact one another,
the laminated structure is disposed at least between the second electrode and the third electrode, and
a fourth electrode is provided directly, or via an insulating layer, on the layer of the molecule with permittivity anisotropy and/or the dipole moment of the multilayer structure.

Claims 19-20 (cancelled)